

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Patent Application of:  
Timothy W. Foley

Application No.: 10/749,891

Confirmation No.: 8907

Filed: December 31, 2003

Art Unit: 3772

For: MOUTHGUARD AND METHOD OF  
MAKING THE MOUTHGUARD

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Examiner: B. L. Jackson

**AFFIDAVIT OF TIMOTHY FOLEY**

Timothy Foley, being duly sworn, does hereby depose and say as follows:

1. I received a BS degree in 1965 from the University of Detroit, and a DDS degree in 1967 from the University of Detroit.

2. I have been employed as a dentist in private practice since 1971. I have also been a professor at the University of Detroit Dental School from 1971 to 1985 and the University of Michigan Dental School from 1985 to 1988.

3. During the 40 year course of my dental practice, I have had the opportunity to treat both professional and amateur athletes that have experienced a dental injury while participating in a sport. The primary sport related injury has been that of a broken or chipped tooth.

4. Also, as part of my dental practice, I fabricate custom mouthguards for use by athletes. These mouthguards also provide protection against concussive injuries. There are several problems universally associated with currently available custom mouthguards. First of all, these mouthguards are bulky and interfere with talking and breathing, so the athletes do not like to wear them, and would rather risk injury. Also, currently available mouthguards cushion

the teeth from an impact force, but do not reduce the force by transporting the force over several teeth. Also, presently available mouthguards cannot be customized for different jaw types.

5. I am presently named as one of the inventors on the present application, U.S. Patent Application No. 10/749,891, entitled "Mouthguard and Method of Making the Mouthguard," which was filed on December 31, 2003. The present invention solves the problems in the art associated with presently known mouthguards, including comfort, size and protection.

6. A technical advantage of this invention is of an outer wall of the mouthguard includes a force transmitting layer. The force transmitting layer distributes an impact force to the mouth transversely across the buccal surface of 10-14 teeth within the arch of the user. The distribution of force in this manner is advantageous since it effectively reduces the force before the force reaches the tooth. As a result, there is less chance of injury to the tooth. This is in contrast to most mouthguards which merely cushion the force of impact to the mouth that is typical of a sports injury.

7. Another technical advantage of this invention is the use of a force transmitting layer that includes a plurality of longitudinally extending fibers bonded together. The force transmitting layer is a rectangular strip that only covers a portion of the teeth in the arch. This material is advantageous since due to the thickness of the fiber and arrangement of the fibers, resulting in a mouthguard that is less bulky or thick than previous mouthguards, while offering enhanced protection to the user. The present invention is about one-half as thick as a conventional mouthguard. In addition, the material is initially flexible while molding, and hardens once molded. This allows customizing for the person wearing the appliance.

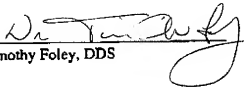
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8. This mouthguard is presently being used by athletes, including the University of Detroit women's and men's basketball teams, University of Michigan women's basketball teams, some Detroit Red Wings hockey players, as well as others.

9. In my opinion, the fact the athletes use the mouthguard, and that none of the athletes that use this product has sustained an injury to the mouth or concussion, is due to the advantages of this invention. Athletes prefer this mouthguard due to its reduced thickness because it does not interfere with breathing or speech. The arrangement of the force transmitting layer in the outer wall and the material for the force transmitting layer consisting of a plurality of fibers is not obvious. Further, the success of this product in preventing or reducing injury should have a relevancy as an indicia of the nonobviousness of the invention.

  
Dr. Timothy Foley, DDS

Date: 5-22-07